

COMMISSION 27 OF THE I. A. U.  
INFORMATION BULLETIN ON VARIABLE STARS  
Number 1710

Konkoly Observatory  
Budapest  
1979 December 3

PHOTOMETRIC OBSERVATIONS OF TT Ari

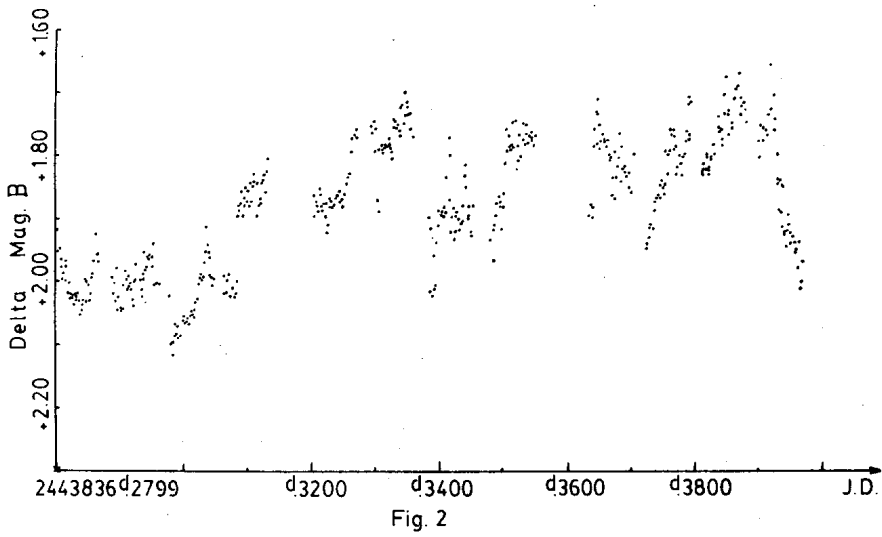
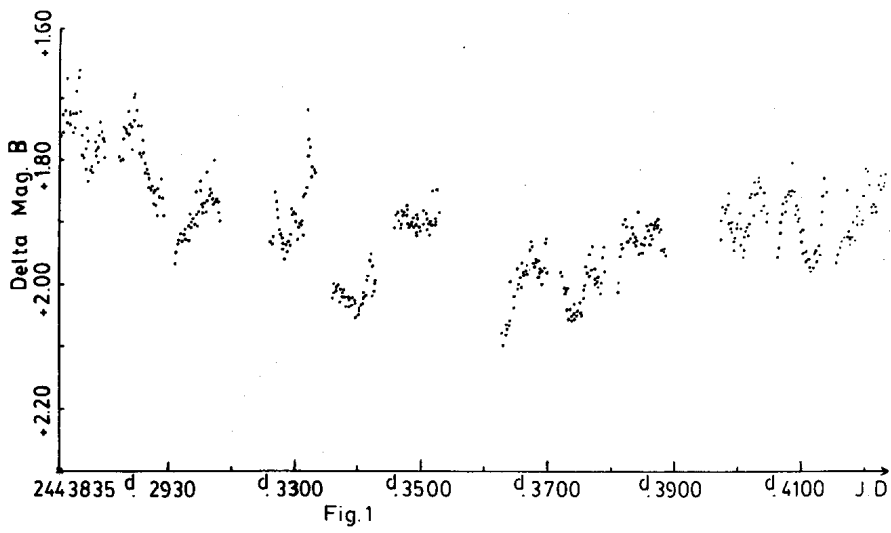
During the nights of 22nd, 23rd, 24th, 25th November 1978, photoelectric observations in B light have been carried out of the nova-like variable TT Ari (=BD+14<sup>o</sup>341). Observations were made with the 60 cm Cassegrain telescope of the Observatory of Bulgarian Academy of Sciences at Belogradchik (Bulgaria).

A single channel photoelectric photometer with an FEU 64 photomultiplier and a pulse photon counter were used. The sky was measured after each 10 minute interval. Observed light variations are shown in Figures 1-4, where the starting points are marked for each night and delta mag. is with respect to the comparison star (=BD+14<sup>o</sup>336).

The analysis of the observational data was carried out by making a least square fitting of the sine-waves

$$A \cdot \sin \left( \frac{2 \cdot \pi}{P} \cdot t + \varphi \right) + B$$

with a range of values for the period. For the 3-hour variations the resulting value of the period is  $P=0.1326 \pm 0.0002$  and the amplitude is about 0.2 mag. A similar value of  $P=0.1329$  was given by Smak and Stepień (1968) also (1975). In a similar way the fast variations were also analysed and it was found that quasi-periodic component with an amplitude of about 0.2 mag. was present with periods of 13.6, 13.1, 14.4, and 13.5 minutes for the four nights, respectively. This is in agreement with the results given by Williams (1966). Finally, using the same method (with a pre-whitening technique), a strong quasi-periodicity with an amplitude of about 0.1 mag. and P around 40 seconds was found. This is in good agreement with Mardirossian et al. (1979).



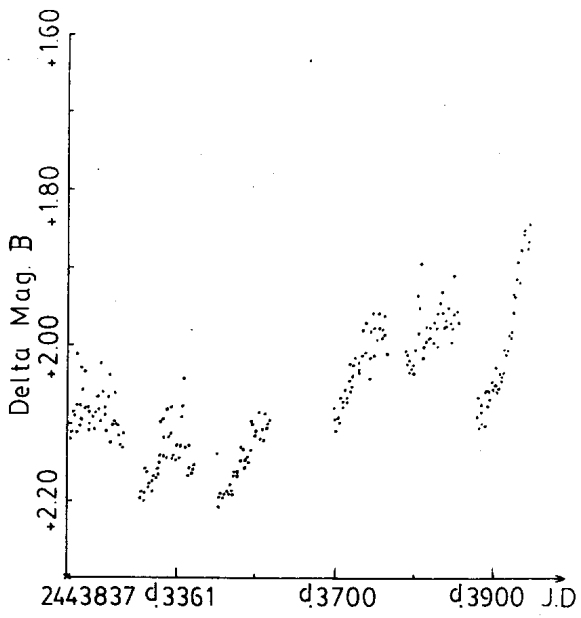


Fig. 3

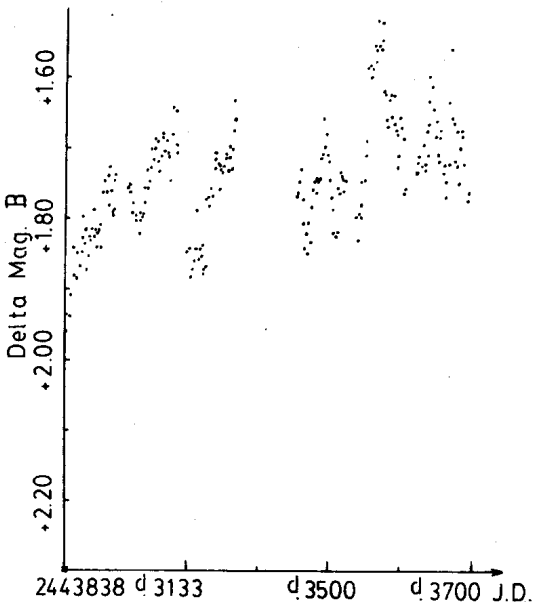


Fig. 4

On the first three nights the observations reported here were simultaneous with those of Mardirossian et al. (1979). A comparison of the two sets of data shows that the star was more active in B than in white light.

The photometric period of  $P=0.1326$  is significantly different from the spectroscopic period of  $P=0.1375$  found by Cowley et al. (1975). It is possible that in this star we have two different periods connected with its photometric and spectroscopic activity.

Acknowledgements:

The author wishes to express his gratitude to Prof. J. Smak for critical evaluation the elaborated results and deeply indebted to Dr. M. Popova for enabling the photoelectrical observations at the Observatory of Bulgarian Academy of Sciences.

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